

# REPORT

— ON —

## Primary School Instruction

MADE BY A SPECIAL COMMITTEE

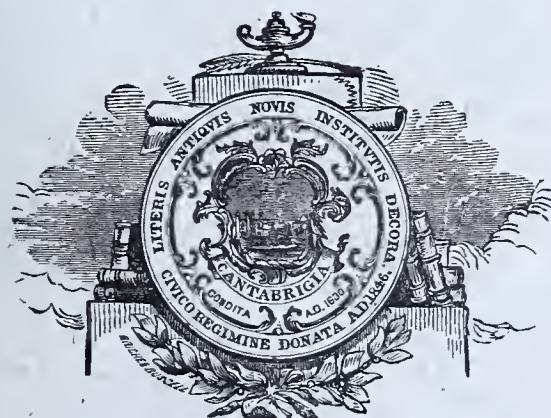
TO THE

## SCHOOL COMMITTEE

OF THE

## CITY OF CAMBRIDGE

MAY 18, 1893



CAMBRIDGE, MASS.  
HARVARD PRINTING COMPANY

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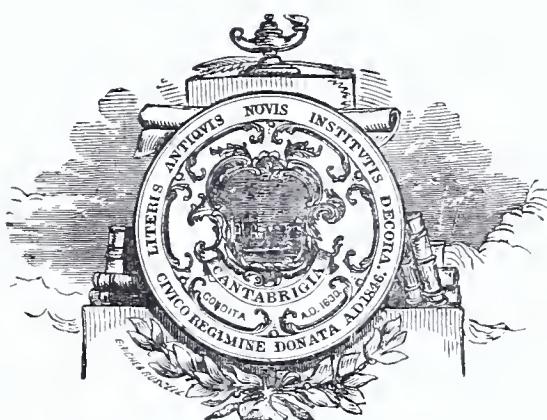
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## REPORT

OF THE SPECIAL COMMITTEE APPOINTED TO CONSIDER THE

# Course of Study in the Primary Schools,

SUBMITTED TO THE

SCHOOL COMMITTEE, MAY 18, 1893.

At a meeting of the School Committee on February 18, 1892, it was "Ordered, That a Special Committee of \*five members, of whom three shall be members of the Standing Committee on Text-Books, be appointed to consider the courses of study in the Grammar and Primary Schools with a view to shortening and enriching the program." This committee gave special attention to the grammar schools, and their report recommended important changes in the course of study for them. The report was accepted and its recommendations were adopted at a meeting of the School Board on June 2. At that time it was further "Ordered, That a committee of five be appointed to examine and report upon the course of study in the Primary Schools." This order was passed and the committee appointed to do this work respectfully submit the following report:

### REPORT ON PRIMARY SCHOOL INSTRUCTION.

The first subject to which your committee wish to call your attention is the

### SUPERVISION OF THE PRIMARY SCHOOLS.

The special committee of 1892 pointed out the need of careful supervision for these schools, and, on their recommendation, a special teacher was appointed to do this work. It is the pleas-

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\*The term of office of one member of this committee having expired December 31, the report is signed by four members only.

ant duty of the present committee to report that the work has been done in the most admirable manner, and that the results have proved the wisdom, both of this method of general supervision and of the choice of the person who now fills this office. But this is not enough. As the schools are now constituted, the principals are absolutely confined to their own school-rooms throughout the entire school session. They are responsible to a certain degree for the character and standing of their schools; but they have no opportunity to influence any class but their own, or to weigh well the influence of any other teacher, and, what is of still more consequence, they cannot make sure that the different grades all work together in the best way for the moral and intellectual advancement of the children. The primary schools are not organic wholes: they are mere aggregations of grades under one roof. To remedy this defect, which is the result of the circumstances and not in any way the fault of the principals themselves, and which cannot be cured, much as it is helped, by supervision from the outside, this committee earnestly recommend that a special teacher be appointed to each of the primary schools which consists of eight or more than eight rooms; and that, for the present, the committee of the training school be asked to provide a substitute teacher to go at intervals to the assistance of each of the principals of the smaller primary schools and so set her free to supervise her own school. They believe that the good effects of this measure would soon be evident in the increased rate of promotion from room to room and from these rooms into the grammar schools.

#### SPECIAL TEACHERS.

There is very great need in the primary schools of this class of teachers who, besides taking occasional charge of the principal's room, would be free to perform the same duties that are performed by such special teachers in the grammar schools. Many of the rooms are so over-crowded that it is impossible for the regular teacher to do justice to both the quick and the slow minds. And in the spring a new class is admitted into the lowest grade, which gives additional work and perplexity to the teacher there. With judicious help some of the children who

enter then, with already a little knowledge of reading, writing, and arithmetic, could catch up with the regular class and go on with it in September, and so complete the course in two years and a half, instead of taking three years for it, or even three and a half, as these April children often do. Even half a year saved is a great gain both to the children who have only a few years of school life before them and to those who are beginning their education with the expectation of having a college course. And when we consider that many of these children are six or seven years old when they enter, the need of this effort to help them along seems imperative. The regular teacher cannot take the time for this work, especially if she has fifty children to look out for, even if she has the strength. And these special teachers could be of the greatest service to those children who for one reason or another are constantly dropping behind. Dawdling is cumulative, and when children begin to be listless and indifferent they drop down into almost hopeless apathy with surprising rapidity. And they are easily discouraged. If they are slow, or feeble, or irregular in their attendance, they are dazed by the amount of their comrades' knowledge and they do not know how to try to catch up with them. Young children need a great deal more care and attention than older ones; and when we compare our crowded, meagrely appointed primary schools with our luxurious high schools, we cannot help suspecting that one reason why popular education, here as elsewhere, has failed to fulfil the hopes of its best friends, is that we are gilding the dome of a structure that is founded on loosely driven piles.

The fact that the children who enter the primary schools are generally nearer six years old than five (the average age of entrance in September, 1892, was five years and eleven months), while nearly one-fourth of them take four years instead of three to go through, partly accounts for the fact that on the average they are nearly ten years old when they leave the primary schools in June, and quite ten when they enter the grammar schools in September. This is two years older than the age counted upon in the general plan, for it is certainly expected that the average age of entrance into the grammar schools will be eight, and it ought not to be much greater. By

and by, when there are kindergartens enough to accommodate all the little children, the age of entrance into the primary schools can be somewhat regulated; for it is understood that the children are not expected to remain in the kindergartens after they are five years old, and they must pass on. But at present the number of children that we can thus control is very small compared with the whole number, and as the law does not require any one to send a child to school until he is eight, we are powerless to help this matter. But we can perhaps diminish the number of the children who remain four years.

In considering this question of age we must remember that the average is often brought up by the presence of children twelve or even fifteen years old, and here we are brought face to face with an evil too serious to go unchecked. In some parts of the city these children come to the lower schools because they cannot speak or understand English well enough to go where they naturally belong, in other cases they have been kept back by serious illness, and sometimes they are feeble-minded. All these children are entirely out of place. Whatever the cause that has kept them so ignorant that they cannot enter the grammar schools, they do not belong in the primary schools. They are too large for the chairs and desks; they are too mature for wholesome companionship with the little children; and if they are feeble-minded they are too heavy a burden to be imposed upon the schools, which ought to be full of eager child life. If there were room, your committee would recommend that these older children make a sub-grammar grade in the grammar school buildings; but as this is manifestly impossible at present, they can only hope that an extra teacher may be able to devise some method by which these children can be helped along faster, and enabled to keep at least within sight of boys and girls of their own age.

#### TIME OF ADMISSION IN SPRING.

At present children are admitted in April, which in our New England climate is perhaps the real beginning of spring. But when they come with absolutely no book knowledge, there is hardly time enough in the three months that intervene

between their entrance and the long vacation to give them a good start, and so it happens that many of them have to begin over again in September, and this time seems to be wasted. Your committee would therefore recommend that the time of admission be changed to the first of March.

#### THE COURSE OF STUDY.

The course of study for the primary schools, as it now stands, includes Reading and Spelling, Writing, Number, Language and Literature, Music, Drawing, Physiology and Hygiene, and Moral Instruction.

#### NATURAL SCIENCE. BOTANY.

There is no formal provision made for natural science; but the teachers are strongly recommended to give some oral instruction every day, and the following subjects are mentioned as "among those most likely to interest and profit the pupil: Color, Form, Place, Size, Qualities of Objects, The Human Body, Plants, Animals, and Familiar Things." In many parts of the city this work has been done well and with admirable results. Boxes of growing plants in various stages of development, trays of minerals amounting in some cases almost to the dignity of a "collection," and "curiosities" proudly treasured as the beginning of a museum, plainly testify that many of the teachers are in sympathy with the world about them and ready to help their pupils to understand its mysteries, and that the children respond eagerly to any instruction in matters that they really want to know about. It seems to your committee that the time has come to introduce the subject of natural science definitely into the curriculum of the lower schools, at least, and to provide, as far as possible, that it be well taught. Some one branch of this wide subject must be chosen to begin with, but it is not of so much consequence what particular branch is taught as how it is taught. The knowledge acquired, useful as it may be, is of small importance compared with the mental training. To be really valuable the method employed must be strictly scientific. The child must be led to observe for himself, to draw logical conclusions from what he observes, and to express

his clear and definite thought correctly and graphically. For several reasons which seem to them to carry weight, your committee recommend that botany be the branch of natural science to be introduced into all three grades of the primary schools next year, and that arrangements be made to have the necessary instruction and advice given to the teachers by some competent person. Botany is perhaps, on the whole, the department of natural science that the teachers are already most familiar with, and it is sure to be interesting to the children. It deals with things that they are naturally fond of, that they see about them every day, and that they can themselves own and take care of, however poor they may be. And if a genuine and intelligent interest in plant life can be formed early in these children and, fostered as they become capable of understanding more and more about it, it will be a constant source of wholesome pleasure to them. There is in the city one of the best botanic gardens in the country, and it is pitiable to see how little it is appreciated by the mass of the people who might enjoy it. Perhaps we can train the rising generation to use more freely the opportunities that lie within their reach.

It will not be a difficult matter to find some one to give the special instruction to the teachers on terms that the city can well afford, and your committee are much mistaken if the teachers do not respond to this movement with alacrity. As we have seen, many of them have already done what they could towards introducing the teaching of science, and there is every reason to believe that they will, as a body, heartily welcome your action, should you decide to adopt this recommendation.

#### PHYSICAL EXERCISES.

The matter of physical exercise has also been left almost entirely to the teachers, the instructions of the committee being, "Have some simple, pleasing exercises not less than twice each session." And here again some of the teachers have led the way. Here and there throughout the city those who have had special training in the Ling system of Swedish school gymnastics have used it with their classes; and others, stimu-

lated by their example or moved by inward conviction, have formed themselves into classes and hired some one to train them. It seems well that the Board should now take some official action; and, after a careful investigation of its merits, your committee recommend that the Ling system, as modified and adapted for the primary schools of Boston by Mr. Nissen, be introduced into the primary schools of Cambridge, and that arrangements be made to give the teachers such instruction as may be necessary to enable them to carry on this work successfully. The committee limit their recommendation of systematic gymnastics to the primary schools, simply because they were appointed to consider their needs only. They also recommend that the committee on the training school be requested to furnish instruction to the members of the training class so that they may go out already prepared for this work.

In urging this measure the committee have been much influenced by the noticeably good effect which these gymnastics have on the order and discipline of the schools where they are well taught. Whether it is due to the fact that they equalize the circulation of the blood, as it is claimed they do, and so put the child into a wholesome state of body and mind, or whether it is due to the habit of prompt and implicit obedience to the word of command which they establish, your committee are unable to say. Probably it is due in some measure to both these causes, but the fact seems to be beyond question.

#### NUMBER. WRITING.

In considering the subjects already well established in the course, this committee find only one or two suggestions to make about either number or writing, which seem to them, on the whole, well taught. In regard to number they would recommend that very simple examples in subtraction and division, as well as in addition and multiplication, be performed in the third grade, that the children may be early and well grounded in all the fundamental operations of arithmetic. And in regard to writing they would suggest that, wherever the relative position of the chairs and desks will permit, the children be required to do all their writing squarely facing their desks.

And it seems well to this committee that paper should be used more and more in place of slates. It is now so cheap that the matter of expense need hardly be considered, it is easier for the children to use neatly and quietly, and it is thought to be better for the eyes. And they would here recommend that very great caution be used in requiring the children to copy numbers from the board. It is a difficult matter to keep the place in copying long lines of figures, the light is not always favorable, and the strain on the eyes and on the nervous system may be very great. They fear that it sometimes happens that by the time the child has got together the materials for his intellectual work he is not in a condition to do it to the best advantage.

#### READING AND SPELLING.

The fundamental subjects of reading and spelling present grave difficulties, which the committee regret to say the methods now in use do not seem to have overcome. Too many of the pupils, even in the grammar grades, read uncertainly as if they were still groping their way, and show an extraordinary timidity in attempting to pronounce even common words with whose printed or written form they are not perfectly familiar. This is, of course, due to the want of sufficient practice, and it is difficult to see how children who come from illiterate families, where books are unknown, can ever get practice enough to read fluently, especially now that the city owns all the text-books and they must be left behind at the school-room door. But perhaps the matter can be somewhat helped by a change of method ; and your committee therefore recommend that the sentence, the word, and the phonic methods all be used, hoping thus to get the good points of all three. It is through complete sentences that the child most quickly and most thoroughly gets the idea that printed or written matter stands for thought ; but when he has mastered that idea, which he ought to do very early in the course, he must learn to know the words as separate individuals. This is an almost hopeless task unless he notices the letters and the constantly recurring combinations of letters and is made perfectly familiar with their phonic value. The letters and the sounds in the language are limited in number,

the words are practically countless and the sentences are really so. It is useless to teach English as one would teach Chinese. The child must have a careful, persistent drill in the elements, in both their form and their sound, and after he has mastered the first difficulties he must read. The only way to learn to read is by reading. And it would be well, as soon as possible, to have two entirely distinct exercises, one for the most careful training in the mechanism and art of reading, in the clear, distinct articulation, the exact pronunciation, the rigid adherence to the texts that are necessary for good reading, the other for pleasure, pleasure both for the child himself and for the other children. Nothing can give an intelligent child a greater stimulus to read well than the need of giving the ideas, as fast as he can pick them up from the book, to a dependent audience. This exercise should be as free as possible from interruption by the teacher, who should give help when it is absolutely needed, but without any attempt to "draw out" the child or the class, and without making any point of correction or allowing the other children to correct; and it should be free from any criticism afterwards. In fact, it should be the result of such training as the child has had put to its legitimate use, reading for pleasure; and the more the interest centres in the matter read and the less in the reader, the more simple and natural the reading will become. Of course a wise teacher will note the faults and try to correct them afterwards, in the next day's or the next week's drill lesson; and if she is thoughtful and observant and able to watch the children without too many preconceived ideas, she may get a good deal of light on the kind of drill they most need. And she will do all this without making the connection between the two exercises so obvious as to destroy the sense of freedom in the pleasure lesson. The books to be read in this lesson must be carefully chosen. They must be easy enough to make it possible for the children to read them quickly, interesting enough to keep the attention of the class, and, as soon as possible, valuable enough to be worthy of becoming a permanent possession of the children's minds.

As a help in the matter of spelling, one of the teachers, who has had many years experience in primary school work, has, at the request of this committee, made a list of some fifteen

hundred words that should be mastered before the child leaves the primary school. The words are divided into classes; those that can be advantageously used for drill in the sounds of the vowels and the combinations of vowels, and of the consonants; those that the child is sure to need in making sentences and in writing from dictation; and a few others, such as proper names, words that experience has shown it is hard for the children to remember, etc.

In teaching this or indeed any list of words, it would be well to make frequent use of the printed letters that come in little boxes prepared for schools. The children would thus, by constant practice in picking out the letters, become perfectly familiar with their printed forms, and moreover have a pleasant change of occupation. The art of writing is so new to them that it must easily become fatiguing. And games of letters thoughtfully arranged might be of very great help in several ways.

With all the light we can get, however, it is still difficult to say just how spelling can be most easily and successfully taught; but the tale of a little boy, who wrote 'gone' correctly fifty times, and then, when he had an important communication to make to his mother, turned over his slate and wrote carefully on the other side, "I have gorn over to Johnny's," shows that unless the connection is made between the words in the books and the words in real life the most elaborate training counts for nothing.

#### LANGUAGE AND LITERATURE.

And so it is with language. The fact is strikingly apparent that, in spite of years of schooling, boys and girls pour out of our school-houses every day with such expressions as "It wasn't me, —Tom done it," or "I guess likely I shall go," on their lips. Your committee wish to recommend that constant practice in making sentences, and constant exercise in writing from dictation the best English prose and in committing to memory the best English poetry, be given in our primary schools; but they wish yet more strongly to urge that correct English be insisted upon at all times in all the grades of our schools, and that not only no

composition but no exercise whatever be accounted good in any grade unless the English is correct. And your committee believe that, if regular teaching in natural science is given, the facts thus acquired will be the very best material for the training in language, and that, because the child has something of his own to say, he will take a real interest in learning to say it.

Literature is not too large a term to use even in connection with the primary course. The stories of Cinderella and Little Red Riding Hood and of those delightful Three Bears, of Robinson Crusoe and his man Friday, of Dick Whittington and his Cat, are literature, for they have fed the imagination of generation after generation of English-speaking children and they are familiarly quoted by all sorts and conditions of men. Books of this kind can easily be read and re-read, if the children ask to re-read them,—as they naturally do if they like a story, and as it is wholesome and right that they should do,—in the time set apart for reading for pleasure.

Perhaps after years of such daily reading the taste for honest literature may take root firmly enough to grow and flourish in spite of the corrupting influence of the cheap sensational trash that is flooding the world today. It is a good deal to hope, but it is the real end that the teacher ought to have in view, and she must keep it in view, even though it seem a long way off. There has never been a time when it was so easy to get good literature in a cheap form for schools as it is now; but it will always be hard to get anything of real literary value that the youngest children can read for themselves, and, until they have acquired some little facility, the teacher must do at least part of the reading for pleasure herself. Judiciously done, and not overdone, this would be a very valuable exercise, full of stimulus and cultivation for the children and vividly enjoyed by them, for every one knows that they can listen with thorough appreciation to books that are much beyond their power to grasp for themselves.

#### MUSIC AND DRAWING.

Music and drawing are provided for by the appointment of special supervisors to take entire charge of these subjects, but

it would not be wise to make of them merely matters of technical training. The children sing little songs for pleasure aside from their regular lesson ; sometimes, perhaps, under the direction of a wise teacher, they sing to clear the over-charged nervous atmosphere of the room ; and they sing national airs to stir in their childish hearts that strong and subtle emotion, love of country. Drawing should also be made to serve its use in the general training. It is certainly not wise that a child should wait until he can draw well before using his pencil to illustrate his thought. The making of a very poor thing (which, perhaps, one would call a 'serawl' if it were not so carefully done) is sometimes a most valuable help to a child in his effort to think out what he means, and wise teachers will freely use this help. If lessons are given in botany, the children can much more clearly show the shape of the seed, the form of the plant at the different stages of its growth, or the parts of the flower, by drawing, than by language, and in many subjects one is a valuable supplement to the other. This use of drawing as a means of illustration, if wisely managed, ought to stimulate a child's interest in his technical training for he can be made to see how much he needs it. Of course this should be done by gentle and slow degrees, so that he may not grow too much discouraged and become shy about expressing himself with his pencil.

#### PHYSIOLOGY AND HYGIENE. MORAL INSTRUCTION.

These are required by law. The statutes are as follows :

"Physiology and Hygiene, which, in both divisions of the subject, shall include special instruction as to the effects of alcoholic drinks, stimulants, and narcotics on the human system, shall be taught as a regular branch of study to all pupils in all schools supported wholly or in part by public money."

"It shall be the duty of all instructors of youth to exert their best endeavors to impress on the minds of children and youth committed to their care and instruction, the principles of piety and justice, and a sacred regard to truth ; love of their country, humanity, and universal benevolence; sobriety, industry, and frugality ; chastity, moderation, and temperance ; and those other virtues which are the ornament of

human society, and the basis upon which a republican constitution is founded; and it shall be the duty of such instructors to endeavor to lead their pupils, as their ages and capacities will admit, into a clear understanding of the tendency of the above-mentioned virtues, to preserve and perfect a republican constitution, and secure the blessings of liberty, as well as to promote their future happiness, and also to point out to them the evil tendency of the opposite vices."

The law is certainly full and explicit, and leaves no doubt in the mind that the Commonwealth expects its public schools to endeavor to build up that basis of character on which alone republican institutions can safely rest. And this can be done most easily and effectively while the minds and hearts of the children are fresh and tender and most easily impressed. It is one of the most serious duties of the primary schools.

The instruction in physiology and hygiene in these lower schools must of necessity be confined mostly to the oral teaching of the simple laws of health, but these are of the greatest consequence. Some of them can be taught practically. Cleanliness, for example, that virtue that ranks next to Godliness, can be insisted upon to some extent. In dealing with all these matters, perhaps especially with the effects of alcohol, the teachers should be careful to found their instruction on scientific truths, or the children will not believe them or be guided by them, when they grow older and temptations multiply.

While your committee do not wish to recommend that a special time be set apart for moral instruction, lest it grow formal and perfunctory and so defeat its end, they wish to take this opportunity to emphasize its importance. Cheerful, intelligent obedience to the law of the school may easily grow into cheerful, intelligent obedience to the law of the land, and for many of our children the training of the school is the only training they will ever have in the love of truth and justice, of courtesy and kindness, or even in the love of country. The need of instilling the elements of patriotism into the little children of our public schools grows greater every year, for they come more and more from foreign families and have no American traditions behind them and no love of the soil born in their veins. This can be done in many indirect as well as in many direct ways. It had been successfully taught in that room

where, after the whole class had been struck dumb for the moment before the difficulty of defining 'freedom,' a little girl suddenly sprang to her feet and exclaimed in a tone of absolute conviction, "It's Hail Columbia!" And it seems hardly possible that many out of the mass of children who stay five or six years in our public schools could rise and stand every time they sing "America," if that were the custom, and then go out into the world without some association of respect, at least, if not of affection, connected with it. It is often in these subtle and silent ways that tendencies are formed and characters made. This whole matter must, however, be left to the teachers. Committees cannot reach it: they can only bear witness to its importance.

#### PROGRAMS FOR RECITATIONS AND FOR DESK WORK.

Whatever the course of study, the teachers must certainly have very definitely in mind what they want to accomplish each year, and about how much time it is necessary to spend on each subject to bring the children up to the desired point. In the course of study of the Boston schools the number of hours a week to be devoted to each subject is specified. Your committee hardly feel that they can do this. It can be done better by the superintendent and the special primary teacher, if in their judgment it is wise to do it, but the committee do feel that they cannot report on the needs of the primary schools without emphasizing the fact that the teachers in the lower grades need a careful time schedule for each day just as much as the teachers in the upper grades do. Perhaps there is even greater danger that without it the time there will slip unprofitably away. Of course the teachers need not be slavishly tied to it, nor feel unable to change the order, or even the whole plan, if circumstances require; but time is sure to be wasted by desultory work anywhere. And it is very evident that a great deal of time is wasted and that a great deal of mischief is bred of idleness between the recitations. This evil is not confined to the primary schools, but its cure can begin there, and your committee believe that a program for desk work should be written upon the board every day where every child can see it; that this program should be

carefully made and often varied ; and that it should contain work enough to keep the brightest child busy all the time that he is out of class. The children should follow this program according to their respective capacities ; for there is no need of uniformity, no possibility of it, indeed, and no expectation that the whole of the work planned out will be done by every child every day. There are some decided advantages in having several occupations going on at the same time ; the children learn independence and acquire the power of concentration, and they have no temptation to copy from each other. By judicious changes in the order, however, each child could be made to do a fair amount of all the different kinds of work each week. But it is not the amount of work that is the principal end to be gained. The real object of this program is to teach the children the invaluable art of taking care of themselves, and of keeping wholesomely busy without asking questions or depending upon the teacher for explanations when she is occupied with some one else. In this way an immense amount of friction might be saved both for the teacher and the children. Experience has shown that even the youngest classes can very soon learn to read such a program and to follow it intelligently, and that they will do so. In these days when so much stress is laid on the art of teaching there is danger that the art of learning may be neglected, and the most serious criticism that has ever been made upon our schools is that they do not train the pupils to read and think and study for themselves. If the children in the lowest grades can be made to feel that they must depend upon themselves, at least to the extent of following out a written program, which is certainly all that can be expected of young children, they may gradually learn self-reliance and presently be able to make out their own program, and in course of time to work systematically without one, and so one long step will have been taken towards curing this most serious of all defects. The work accomplished by the children must of course be inspected by the teacher, but the task need not be as formidable as it might at first appear. A trained teacher can take in at a glance the value of a great deal of clay modelling or stick-laying or paper-folding, or even of a few lines of writing, either of words or of music, and the number work, if done on paper, might sometimes wait for the next day's recitation.

## MANUAL TRAINING.

Your committee cannot neglect to mention a subject which at the present time, is occupying the attention of many who are prominent in the educational world, and which is exciting the greatest interest in the community in general, Manual Training. The subject is an important one, and it presents some serious difficulties, and in the judgment of this committee it cannot be wisely considered in connection with the primary schools alone. The gap is very great between the careful training in this direction in the kindergartens and the admirable training which the boys of the English high school get in the Manual Training school, that institution of which the city is so proud and for which it is so grateful to one of its most public-spirited citizens. A slender line of work in connection with drawing and a little sewing for the girls alone serve to bridge over this long space. This committee would therefore recommend that a committee of five be appointed to consider this subject in connection with the whole course in the public schools of this city.

## RECOMMENDATIONS.

In conclusion your committee present the following orders for your consideration:

1. Ordered, That, beginning with the school year 1893-94, a special teacher may be appointed in any school of seven, or more than seven, rooms.
2. Ordered, That the committee on the Training School employ, at a salary not exceeding four hundred dollars a year, two teachers, in addition to the number now authorized, to act as substitutes when needed; and, when their services are not so required, to act as special teachers in the primary schools to which they shall be assigned by the Superintendent.
3. Ordered, That pupils shall be admitted regularly to the primary schools on the first school day of March and of September, only.
4. Ordered, That, to secure the training given by the study of natural science, Botany be introduced into all three grades of the primary schools in September, 1893.

5. Ordered, That the Ling System of Swedish Gymnastics, as adapted for the primary schools of Boston, be used in all the grades of the primary schools of Cambridge.

6. Ordered, That the committee on Text-Books and Courses of Study be hereby authorized to employ suitable persons to give instruction in Botany and in the Ling System of Swedish Gymnastics to the teachers of the primary schools.

7. Ordered, That a committee of five be appointed to consider the subject of manual training in connection with all the grades of the city schools.

ELLEN A. GOODWIN.

WM. A. MUNROE, *Chairman.*

FREDERIC W. TAYLOR.

ANNE C. STEWART.

IN SCHOOL COMMITTEE, June 1, 1893.

The foregoing report and orders were adopted as herein printed.

SANFORD B. HUBBARD,  
*Secretary.*





